

Amendments

In the Claims

1. (Twice Amended) An apparatus for guiding the movement of surgical tool in relation to the anatomy of a patient, the apparatus comprising:

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display means for indicating to a human the difference between the actual and desired positions of the tool; and

means for determining an actual position of the display means [for indicating].

3. (Amended) [The apparatus of claim 2 wherein the means for indicating is] An apparatus comprising:

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a surgical tool having a tool reference frame;

means mounted to the tool for indicating to a human the difference between the actual and desired positions of the tool; and

means for determining an actual position of the means for indicating.

4. The apparatus of claim 1 wherein the display means [for indicating] comprises at least one indicator, the indicator indicating a direction in which the tool should be moved to reach the desired position.

6. (Amended) The apparatus of claim [5] 3 wherein the [at least one indicator is a light emitting diode] tool includes proximal and distal ends and the display means comprises a plurality of selectively operable human visible indicators located at the distal end for indicating a direction in which the distal end should be translated to reach the desired position, said plurality of position indicators disposed at angular intervals so as to surround a central point.

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Please cancel claim 16 without prejudice or disclaimer.

17. (Twice Amended) An apparatus for use with an image guided surgery system comprising:

a surgical tool having a tool reference frame;

means for communicating an actual position of the tool to the image guided surgery system;

(14) at least one position indicator mounted to the tool, the at least one indicator providing to a human operator an indication of the direction in which the tool should be moved to reach a desired position.

25. (Twice amended) [A surgical tool] An apparatus comprising:

a surgical tool;

(15) a plurality of infrared emitters mounted to the tool for providing position signals to an infrared localizer; and

at least one human readable position indicator mounted to the tool.

26. (Amended) A method for guiding the movement of a surgical tool with respect to the anatomy of a patient having patient reference frame, the method comprising the steps of:

determining a desired position of the tool based on an image of the anatomy of the patient, the image having an image reference frame;

correlating the image and patient reference frames;

determining the actual position of the tool;

determining a direction in which the tool must be moved to reach the desired position;

determining an actual position of a human readable position display having a display reference frame; and

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[indicating] utilizing the human readable position display to indicate the direction in which the tool must be moved to reach the desired position, said indication being provided in relation to the indicator reference frame.

27. (Twice amended) [The apparatus of claim 26] A method for guiding the movement of a surgical tool with respect to the anatomy of a patient having a patient reference frame, the method comprising the steps of:

determining a desired position of the tool based on an image of the anatomy of a patient, the image having an image reference frame;

determining a direction the tool must be moved to reach the desired position;

determining an actual position of a position indicator having an indicator reference frame, wherein the [the] position indicator is mounted to the tool and the step of determining an actual position of the position indicator includes determining an actual position of the tool; and

utilizing the position indicator to indicate to a human the direction in which the tool must be moved to reach the desired position, said indication being provided in relation to the indicator reference frame.

Please amend claim 28 to depend from claim 27.

Please amend claim 29 to depend from claim 27.

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30. (Twice amended) [The method of claim 26] A method for guiding the movement of a surgical tool with respect to the anatomy of a patient having a patient reference frame, the method comprising the steps of:

determining a desired position of the tool based on an image of the anatomy of a patient, the image having an image reference frame;

determining a direction the tool must be moved to reach the desired position;

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Cont.*

determining an actual position of a position indicator having an indicator reference frame,
wherein the position indicator is mounted to the tool and the position indicator comprises at least one indicator for indicating a direction in which the tool must be moved to reach a desired location and at least one indicator for indicating a direction in which the tool must be moved to reach a desired orientation; and

utilizing the position indicator to indicate to a human the direction in which the tool must be moved to reach the desired position, said indication being provided in relation to the indicator reference frame.

31. (Twice amended) The method of claim 26 wherein the [position indicator] human readable position display includes a plurality of light emitting diodes mounted to the tool.

Please amend claim 33 to depend from claim 27.

Please amend claim 34 to depend from claim 27.

Please amend claim 35 to depend from claim 27.

Remarks

This Amendment A makes reference to a final rejection dated October 16, 1998. Claims 1, 2, 4-15, 26, 28, 31, and 33-35 stand rejected under 35 U.S.C. 102(e) as anticipated by Barrick. Claims 17, 29-23, and 25 stand rejected under 35 U.S.C. 102(b) as anticipated by Cartmell. Claim 16 stands rejected 35 U.S.C. 103(a) as unpatentable over Barrick in view of Bucholz. Claim 29 stands rejected under 35 U.S.C. 103(a) as unpatentable over Barrick.

Claims 3, 24, 27, and 30 are in condition for allowance

Claims 3, 27, and 30 are objected to as being dependent on a rejected base claim. Claim 24 stands allowed.